

## **HARD TIP OVER-THE-NEEDLE INTRAVENOUS CATHETER**

### Abstract of the Disclosure

A soft over-the-needle (OTN) catheter that has been treated at a distal end to provide a higher durometer (i.e., harder) surface to facilitate insertion of the catheter into a patient is provided. The catheter preferably comprises a soft flexible tube made of polyurethane and having a hardness in the range of 50A to 90A where the treated distal end has a hardness of above 90A. The OTN catheter may also include an annular abutment shoulder formed at a distance from the distal end of the catheter. An insertion needle also comprises an abutment means, preferably a collar positioned on the exterior of the insertion needle, to abut the abutment shoulder of the catheter. Where the catheter is to be fed significantly into the vascular system, an optional metal ring may be secured within the catheter, adjacent the internal shoulder. When the needle is removed, the metal ring remains in place, permitting electromagnetic tracking of the catheter as it is fed through the vascular system. In an alternative embodiment, rather than chemically treating the distal end of a soft catheter, a discrete segment of hard tubing is press fit into the interior of the distal end of a soft catheter.

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